



Formula 1:

$$P(\Omega) = \int_{-\infty}^{+\infty} f(x) dx = 1 \quad (1)$$

Formula 2:

$$E(X) := \int_{-\infty}^{+\infty} x f(x) dx \quad (2)$$

A third one, with references to 1 and 2:

$$\begin{aligned} E(aX + b) &= \int_{-\infty}^{+\infty} (ax - b) f(x) dx \\ &= a \int_{-\infty}^{+\infty} x f(x) dx + b \int_{-\infty}^{+\infty} f(x) dx \\ &\stackrel{(1),(2)}{=} aE(X) + b \end{aligned} \quad (3)$$

And another one:

$$V(X) = \frac{a^2 + b^2 + c^2 - ab - ac - bc}{18} \quad (4)$$